

Ancient Wisdom Guides Future Energy Paths

Inside Albuquerque's Indian Pueblo Cultural Center (IPCC), visitors get a glimpse of the proud Native American heritage that has been kept alive for more than a thousand years. The IPCC welcomes over 400,000 visitors a year, invoking a picture of the ancient, largely secretive ceremonial life of New Mexico's Indian Pueblos. Their heritage includes a legacy of an equitable government, cliff dwellings, intensive agriculture with sophisticated irrigation systems, and highly developed pottery, weaving, jewelry and leatherwork.

Today, the Pueblo people are settled in 19 sovereign reservation communities, ranging from Taos Pueblo in Northern New Mexico, to the tiny but thriving Santa Ana Pueblo, a booming resort area north of Albuquerque, or to the world-renowned splendor of Acoma Pueblo's Sky City. The Pueblo people continue living a lifestyle today that embraces their surrounding environment and keeps with their traditions.



New Applications of Ancient Wisdom

The indigenous Pueblo Indians created an urban life in harmony with the environment and with each other, and the IPCC's emblem (above) represents part of this harmony. Its lower half depicts the Avanyu—the Tewa

Pueblo word for water serpent—symbolizing a desert culture's dependence on water. The serpent's tongue is associated with lightning, and the upper semicircular portion of the logo represents eagle feathers—a common Pueblo design. The smaller enclosed and cross-hatched semicircle is a rain symbol and the upward directed semicircle is a traditional cloud symbol.



Photovoltaic (PV) panels on top of the carport capture sunlight and convert it directly into electricity for the IPCC, reducing the need for fossil fuel and nuclear power.

The symbol serves as a reminder of the harmony and connection the Pueblo's have with nature and their dependence on it. It also provides the Pueblos with a sense of purpose in their role with nature and the delicate balance that exist among nature and humans. By being environmentally aware, the Pueblos have come to see the importance of renewable energy—particularly solar.

The parking lot of the IPCC is currently being harnessed to make clean energy in the use of a “solar carport.” Photovoltaic (PV) panels on

PARTNERSHIP FACTS:

- **Targeted Buildings:**
Indian Pueblo Cultural Center
- **Estimated Energy Savings:**
539,136 kWh per day; 22.5% of its pre-retrofit bill;
\$23,285 in annual energy savings
- **Environmental Savings:**
207 tons of carbon dioxide, 2,668 lbs. of sulfur
oxide, and 1,550 lbs of nitrogen oxide

top of the carport capture sunlight and convert it directly into electricity for the IPCC, reducing the need for fossil fuel and nuclear power.

Dave Melton—a member of the Laguna Pueblo and President of Diversified Systems Manufacturing—created the solar carport project for the IPCC. The 11,040-watt system is the largest commercial PV array in the state. The solar carport will be tied to the Public Service Company of New Mexico's electric utility grid. The building's solar array is used to supply the power the IPCC needs. When the solar array is 'off,' the grid feeds IPCC with power that they have "stored" from what would have been used energy. By using solar energy and still being connected to the grid, the energy becomes stored for when IPCC needs another source of electricity.

A Good Payback for Efficiency

A monitoring system was installed to calculate energy, water and monetary savings resulting from the carport. Renewable energy from the carport produces 11,040 watts per hour—the energy equivalent of burning 30 pounds of coal. Over the course of a year, the carport's PV system will avoid the combustion of 43 tons of coal and save over 1 million gallons of water annually! This energy savings information will be graphically displayed at the kiosk inside the Cultural Center to all 400,000 visitors each year. Melton coined the phrase, "mining the sky, making it rain," to describe the way PV can use solar energy to make electricity from sunshine, and to conserve water by reducing its use in coal processing.

With help from Rebuild America, the IPCC is saving over \$20,000 a year due to more efficient lighting in the complex. By replacing inefficient lamps, IPCC is saving 539,136 kWh per day, or 22.5 percent of its pre-retrofit bill, which calculates out to annual energy savings of \$23,285.

Its Place in the Sun

In October 1999, Rebuild America and Million Solar Roofs representatives joined U.S. Department of Energy's Assistant Secretary, office of Energy Efficiency and Renewable Energy (EERE), Dan Reicher and the IPCC partnership to dedicate the PV system and to recognize its contributions to a cleaner energy future. At the dedication, Reicher spoke about



Asst. Sec. Dan Reicher during a dedication, spoke about the importance of renewable energy and later presented a plaque to President Rafael Gutierrez honoring the IPCC partnership.

the importance of renewable energy and presented a plaque honoring the partnership to IPCC President Rafael Gutierrez. The Indian Pueblo Cultural Center tells a timeless story of using nature's resources wisely, with hopes of creating a new heritage for future generations of all nations.

TO LEARN MORE ABOUT THE INDIAN PUEBLO CULTURAL CENTER, CONTACT:

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Visit the Rebuild America Web site at: www.rebuild.org
Or call the Energy Efficiency and Renewable Energy Clearinghouse at: 1-800-DOE-3732

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